Claims

[c1]   1. A data decoding method for an optical disk system, comprising the steps of:

extracting a first batch of data encoded in a first bit format from a serial data;

looking up a modified decoding table to convert the first batch of data into a second batch of data encoded in a second bit format, wherein the modified decoding table includes a data conversion for a first batch of data that does not conform to a standard modulation rule; and outputting the second batch of data.

[c2]   2. The data decoding method of claim 1 wherein the first bit format is encoded in 14 bits and the second bit format is encoded in 8 bits.

[c3]   3. The data decoding method of claim 2 wherein the first batch of data that does not conform to the standard modulation rule has less than two first type of logic bits between two neighboring second type of logic bits within the first batch of data.

[c4]   4. The data decoding method of claim 2 wherein the first batch of data that does not conform to the standard

modulation rule has more than ten first type of logic bits between two neighboring second type of logic bits within the first batch of data.

[c5] 5. The data decoding method of claim 1 wherein the optical system is able to read data from a compact disk read-only-memory (CD-ROM).

[c6] 6. The data decoding method of claim 1 wherein the standard modulation rule is an eight-to-fourteen modulation (EFM) and the standard modulation rule follows an EFM standard.

[c7] 7. The data decoding method of claim 6 wherein the modified decoding table comprises transformation entries conformable to the EFM standard.

[c8] 8. A data decoding method for an optical disk system, comprising the steps of:

extracting a first batch of data encoded in a first bit format from a serial data;

modifying the first batch of data to conform to a standard modulation rule if the first batch of data does not conform to the standard modulation rule;

converting the first batch of data into a second batch of data encoded in a second bit format by consulting a decoding table; and

outputting the second batch of data.

[c9] 9. The data decoding method of claim 8 wherein the first bit format is encoded in 14 bits and the second bit format is encoded in 8 bits.

[c10] 10. The data decoding method of claim 9 wherein the first batch of data that does not conform to the standard modulation rule has less than two first type of logic bits between two neighboring second type of logic bits within the first batch of data.

[c11] 11. The decoding method of claim 9 wherein the step of modifying the first batch of data includes setting the number of first type of logic bits between two neighboring second type of logic bits within the first batch of data to two.

[c12] 12. The data decoding method of claim 9 wherein the first batch of data that does not conform to the standard modulation rule has more than ten first type of logic bits between two neighboring second type of logic bits within the first batch of data.

[c13] 13. The decoding method of claim 9, wherein the step of modifying the original first batch of data includes setting the number of first type of logic bits between two neighboring second type of logic bits within the first batch of

data to ten.

[c14]   14. The data decoding method of claim 8, wherein the optical system is able to read data from a compact disk read-only-memory (CD-ROM).

[c15]   15. The data decoding method of claim 8 wherein the standard modulation rule is an eight-to-fourteen modulation (EFM) and the standard modulation rule follows an EFM standard.

[c16]   16. The data decoding method of claim 15 wherein the decoding table comprises transformation entries conformable to the EFM standard.